AMENDMENT NO. 1 APRIL 2017
TO
IS 15959 (PART 2) : 2016 DATA EXCHANGE FOR ELECTRICITY METER READING, TARIFF AND LOAD CONTROL — COMPANION SPECIFICATION

PART 2 SMART METER

(*Page* 1, *clause* **3.3**) — Substitute 'Last Gasp' *for* 'Last Gap'.

[*Page* 2, *Table* 2, *Sl No*. (iv), *col* 8] — Substitute 'Not applicable' *for* 'Low Level security (LLS)'.

[*Page* 2, *Table* 2, *Sl No*. (v), *col* 8] — Insert 'Data notification' and 'General protection' at the end.

[*Page* 2, *Table* 2, *Sl No*. (v), *col* 6] — Insert 'General protection, Get and Get with block transfer' at the end.

[*Page* 2, *Table* 2, *Sl No*. (v), *col* 7] — Delete 'Set with block transfer'.

[*Page* 2, *clause* **6**, *para* 3] — Insert the following after second sentence :
'Client shall be able to read attribute "Push_object_list" of Push setup objects in PUSH association.'

(*Page* 3, *Fig*. 2) — Substitute the obis code mentioned under Logical Name as '0.b.25.9.0.255' (b = 0 to 4) *for* '0.0.25.9.e.255'.

[*Page* 3, *Table* 3, *Sl No.* (i), *col* 3] — Substitute the obis code as '0.0.25.9.0.255' *for* '0.0.25.9.1.255'.

[*Page* 3, *Table* 3, *Sl No.* (ii), col 3] — Substitute the obis code as '0.1.25.9.0.255' *for* '0.0.25.9.2.255'.

[*Page* 3, *Table* 3, *Sl No.* (iii), col 3] — Substitute the obis code as '0.2.25.9.0.255' *for* '0.0.25.9.3.255'.

[*Page* 3, *Table* 3, *Sl No.* (iv), col 3] — Substitute the obis code as '0.3.25.9.0.255' *for* '0.0.25.9.4.255'.

[*Page* 3, *Table* 3, *Sl No.* (iv), col 6] — Substitute the obis code as '0.3.15.0.4.255' *for* '0.0.15.1.4.255.

[*Page* 3, *Table* 3, *Sl No.* (v), *col* 3] — Substitute the obis code as '0.4.25.9.0.255' *for* '0.0.25.9.5.255'.

(*Page* 4, *clause* **6.1.1**) — Substitute the obis code as '0.0.25.9.0.255' *for* '0.0.25.9.1.255'.

[*Page* 4, *Table* 4, *Sl No.* (ii), *col* 3] — Substitute the obis code as '0.0.25.9.0.255' *for* '0.0.25.9.1.255'.

(*Page* 4, *clause* **6.1.3**) — Substitute the obis code as '0.2.25.9.0.255' *for* '0.0.25.9.3.255'.

(*Page* 4, *clause* **6.1.4**) — Substitute the obis code as '0.3.25.9.0.255' *for* '0.0.25.9.4.255'.

(*Page* 4, *clause* **6.1.2**) — Substitute the obis code as '0.1.25.9.0.255' *for* '0.0.25.9.2.255'.

[*Page* 4, *Table* 5, *Sl No.* (ii), *col* 3] — Substitute the obis code as '0.1.25.9.0.255' *for* '0.0.25.9.2.255'.

[*Page* 4, *Table* 6, *Sl No.* (ii), *col* 3] — Substitute the obis code as '0.2.25.9.0.255' *for* '0.0.25.9.3.255'.

[*Page* 4, *Table* 7, *Sl No.* (ii), *col* 3] — Substitute the obis code as '0.3.25.9.0.255' *for* '0.0.25.9.3.255'.

(*Page* 4, *clause* **6.1.5**) — Substitute the obis code as '0.4.25.9.0.255' *for* '0.0.25.9.5.255'.

[*Page* 5, *Table* 8, *Sl No.* (ii), *col* 3] — Substitute the obis code as '0.4.25.9.0.255' *for* '0.0.25.9.3.255'.

Price Group 4

Amendment No. 1 to IS 15959 (Part 2) : 2016

(*Page* 5, *Table* 10) — Delete the following from 'Three phase meter' list

3 7/8 — Over voltage in any Phase
4 9/10 - Low voltage in any Phase
11 67/68 — Over current in any phase

(*Page* 5, *Table* 10) — Insert the following in 'Common to 3 Phase and single phase meter' list

3 7/8 — Over voltage in any Phase
4 9/10 — Low voltage in any Phase
11 67/68 — Over current in any phase

(*Page* 5, *clause* **6.1.5**) — Insert the following as second paragraph :

'An Event Status Word Filter (ESWF) object (0.0.94.91.26.255) is defined which can be read by Client in MR Association and Read/Written in US association. The data type of the ESWF object and bit mapping shall be same as ESW (bit string of 128 bits).Events which are supported in the meter shall only be configured for Event Push. Bit value'1' in ESWF string indicates that the event is supported and value '0' indicates the event is not supported for Event Push.'

[*Page* 6, *clause* **7.2**, *para* (c), *line* 8] — Substitute 'Version: 3' *for* 'Version: 1'.

(*Page* 6, *clause* **7.2**) — Insert the following at the end:

'e) MR, US and Firmware Upgrade associations shall use Service specific dedicated key ciphering. PUSH and IHD associations shall use General protection.'

(*Page* 6, *clause* **7.3.1**) — Insert the following at the end of second paragraph :

'The security setup object (0.0.43.0.e.255, e = 2, 3, 4, 5) shall be used for changing the Global key (encryption & authentication). New global key will be wrapped with Master key using AES Key wrap algorithm and key transfer method is executed in US association. The new key shall be activated immediately after the successful key transfer. The Global key shall be common for MR, US, FW and PUSH associations and hence changing of key using any of the security setup object (0.0.43.0.e.255 , e = 2, 3, 4, 5) shall reflect in all associations (MR, US, FW and PUSH). IHD Association shall use separate Global key which will be factory set. Changing of the same is not in the scope of this document.'

(*Page* 6, *clause* **7.3.1**, *para* 2) — Substitute 'The utility shall modify the unique global key and further responsibility of safety, security, management of global key will..' *for* 'The utility shall modify the unique master key and further responsibility of safety,security,management of master key will ....'.

[*Page* 7, *Table* 13, *Sl No*. (i), *col* 4] — Substitute the obis code as '0.0.44.0.0.255' *for* '0.0.44.0.1.255'.

[*Page* 8, *Table* A1, *Sl No*. (xx), *col* 4] — Substitute '71/3'*for* '71'.

[*Page* 9, *Table* A3, *Sl No*. (i), *col* 3] — Substitute '0.0.1.0.0.255' *for* '0.0.0.1.0.255'

(*Page* 9, *Table* A2) — Insert the following at the end of table

vii	Average current	1.0.11.27.0.255	3/2

(*Page* 10, *clause* **13.1**, *para* 1) — Insert the following sentence at the end of paragraph :

Parameters that do not have a scaler-unit (like IC = 1) shall not be included in the capture objects list.

(*Page* 11, *Table* A7) — Insert the following at the end of table

x)	161	LLS secret (MR) change
xi)	162	HLS key (US) change
xii)	163	HLS key (FW) change
xiii)	164	Global key change(encryption and authentication)
xiv)	165	ESWF change
xv)	166	MD reset

(*Page* 11, *Table* A8) — Insert the following at the end of table

vii)	209	Plug in Communication module removal Occurrence
viii)	210	Plug in Communication module removal Restoration
ix)	211	Configuration change to post-paid mode
x)	212	Configuration change to pre-paid mode
xi)	213	Configuration change to "Forwarded only" mode
xii)	214	Configuration change to"Import and Export" mode
xiii)	215	Overload — occurrence
xiv)	216	Overload — restoration

(*Page* 11) — Insert the following before Table A5

Table B1 Indian Event Reference Table — Voltage Related

(*Clause* 15 *and* 15.1)

Sl. No	Event ID	Descriptions
i)	7	Overvoltage - Occurrence
ii)	8	Overvoltage - Restoration
iii)	9	Low Voltage - Occurrence
iv)	10	Low voltage - Restoration

NOTES

1 Occurrence / Restoration are considered as separate events.

2 For each of the events a certain list of parameters shall be captured as per Table A11.

3 For each of the occurrence event captured, the cumulative tamper count value shall be incremented.

4 Support for selective access shall be as defined in clause 11.3 of IS 15959.

[*Page* 8, *clause* **11.1**, *line* 8, (e)] — Substitute 'Tables A5 to A11and B1' *for* 'Tables A5 to A11'.

[*Page* 10, *clause* **15**, *line* 8, (e)] — Substitute 'Tables A5 to A10 and B1' *for* 'Tables A5 to A10'.

(*Page* 11, *Table* A5) — Substitute the existing table content with the following.

i)	51	current reverse — Occurrence
ii)	52	current reverse — Restoration
iii)	67	Over current — Occurrence
iv)	68	Over current — Restoration
v)	69	Earth loading — Occurrence
vi)	70	Earth loading - Restoration

(*Page* 11, *Table* A5) — Insert the following new note after Note 4:

'**5** Sl No (i) and (ii) is applicable for meter operating in 'Forwarded only' mode.'

(*Page* 12, *Table* A11) — Insert the following at the end of table

vii)	Cumulative tamper count	0.0.94.91.0.255	1/2

[*Page* 12, *Table* A13, *line* 7, *col* (1)] — Substitute 'vii' *for* 'vvi'.

(*Page* 12, *Table* A13) — Insert the following at the end of table

ix)	Metering mode	0.0.94.96.19.255	1
x)	Payment mode	0.0.94.96.20.255	1
xi)	Last token recharge amount	0.0.94.96.21.255	1
xii)	Last token recharge time	0.0.94.96.22.255	1
xiii)	Total amount at last recharge	0.0.94.96.23.255	1
xiv)	Current balance amount	0.0.94.96.24.255	1
xv)	Current balance time	0.0.94.96.25.255	1
xvi)	LLS secret	0.0.40.0.2.255	15
xvii)	HLS key	0.0.40.0.e.255 (e=3, 5)	15
xviii)	Global key change	0.0.43.0.e.255	64
xix)	Image activation single action schedule	0.0.15.0.2.255	22
xx)	ESWF	0.0.94.91.26.255	1
xxi)	MD Reset	0.0.10.0.1.255	9 (method 1)

(*Page* 12, *Table* A13, *Notes*) — Insert the following new Notes after Note 5:

'**6** For Sl No. (ix), value shall be represented in unsigned character format and interpreted as below

- 0 => means Forwarded only metering mode
- 1 => means net metering mode

7 For Sl No. (x), value shall be represented in unsigned character format and interpreted as below

- 0 => means post paid meter
- 1 => means pre-paid meter

8 Prepayment facilities shall be achieved by HES. In "pre-paid meter " mode the parameter listed at Sl No. (xi), (xii), (xiii), (xiv) and (xv) shall only be updated in meter from HES. These parameters shall have Read Write access in US association and Read Only access in MR and IHD Associations.

9 Parameter listed at Sl No. (xii) and (xv) shall be represented as octet string (12) and interpreted in DLMS date-time format.

10 Parameter listed at Sl No. (viii) shall have execute access and Parameter listed at Sl No. (xix) shall have set access in FW association.'

[*Page* 13, *Table* A14, *Sl No.* (xxviii), *col* 3] — Substitute the obis code as '0.0.96.3.10.255' *for* '0.0.96.31.0.255'.

(*Page* 13, *Table* A14) — Insert the following at the end of table

xxx)	Cumulative energy, kVArh(QI)	1.0.5.8.0.255	3/2
xxxi)	Cumulative energy, kVArh(QII)	1.0.6.8.0.255	3/2
xxxii)	Cumulative energy, kVArh(QIII)	1.0.7.8.0.255	3/2
xxxiii)	Cumulative energy, kVArh(QIV)	1.0.8.8.0.255	3/2

(*Page* 13, *Table* A14) — Substitute the Note 12 at the end of table with the following:

'**12** The parameter at the Sl No. (xxiii), (xxv), (xxxi) and (xxxii) are only applicable for meters supporting 'import and export' energy measurement.'

(*Page* 14, *Table* A15) — Delete the following from table:

ix)	Block energy, KVAh(lag)	1.0.5.29.0.255	3/2
x)	Block energy, KVAh(lead)	1.0.8.29.0. 255	3/2

(*Page* 14, *clause* **18.1**, *para* 1) — Insert the following sentence at the end of paragraph :

Parameters that do not have a scaler-unit (like IC = 1) shall not be included in the capture objects list.

(*Page* 14, *clause* **19.1**, *para* 1) — Insert the following sentence at the end of paragraph :

Parameters that do not have a scaler-unit (like IC = 1) shall not be included in the capture objects list.

(*Page* 15, *clause* **20.1**, *para* 1) — Insert the following sentence at the end of paragraph :

Parameters that do not have a scaler-unit (like IC = 1) shall not be included in the capture objects list.

(*Page* 15, *Table* A17, *col* 1) — Substitute 'lx,lxi' *for* 'xl,xli'.

(*Page* 15, *Table* A17) — Insert the following at the end of table:

xlii)	Cumulative energy, kVArh(QI)	1.0.5.8.0.255	3/2
xliii)	Cumulative energy, kVArh(QII)	1.0.6.8.0.255	3/2
xliv)	Cumulative energy, kVArh(QIII)	1.0.7.8.0.255	3/2
xlv)	Cumulative energy, kVArh(QIV)	1.0.8.8.0.255	3/2

(*Page* 15, *Table* A17) — Substitute the Note 6 at the end of table with the following:

'**6** The parameter at Sl No. (xl), (xli), (xliii) and (xliv) are applicable only for meter supporting 'import and export'energy measurement.'

(*Page* 17, *Table* A21) — Insert the following at the end of table:

x)	161	LLS secret (MR) change
xi)	162	HLS key (US) change
xii)	163	HLS key (FW) change
xiii)	164	Global key change
xiv)	165	ESWF change
xv)	166	MD reset

(*Page* 17, *Table* A22) — Insert the following at the end of table:

vii)	209	Plug in Communication module removal Occurrence
viii)	210	Plug in Communication module removal Restoration
ix)	211	Configuration change to post-paid mode
x)	212	Configuration change to pre-paid mode
xi)	213	Configuration change to "Forwarded" only mode
xii)	214	Configuration change to "Import and Export" mode
xiii)	215	Overload — occurrence
xiv)	216	Overload — restoration

[*Page* 17, *Table* A25, *Sl No*. (iii), *col* 3] — Substitute '1.0.31.7.0.255' *for* '1.0.3.7.0.255'.

[*Page* 17, *Table* A25, *col* 1] — Substitute 'ix to xiii' *for* 'xi to xv'.

(*Page* 17, *Table* A25) — Insert the following at the end of table

xiv)	Cumulative tamper count	0.0.94.91.0.255	1/2

(*Page* 18, *Table* A27) — Insert the following at the end of table

viii)	Image transfer	0.0.44.0.0.255	18
ix)	Metering mode	0.0.94.96.19.255	1
x)	Payment mode	0.0.94.96.20.255	1
xi)	Last token recharge amount	0.0.94.96.21.255	1
xii)	Last token recharge time	0.0.94.96.22.255	1
xiii)	Total Amount at last recharge	0.0.94.96.23.255	1
xiv)	Current balance amount	0.0.94.96.24.255	1
xv)	Current balance time	0.0.94.96.25.255	1
xvi)	LLS secret	0.0.40.0.2.255	15
xvii)	HLS key	0.0.40.0.e.255 (e=3, 5)	15
xviii)	Global key change	0.0.43.0.e.255	64
xix)	Image activation single action schedule	0.0.15.0.2.255	22
xx)	ESWF	0.0.94.91.26.255	1
xxi)	MD Reset	0.0.10.0.1.255	9 (method 1)

(*Page* 18, *Table* A27, *Note* 2) — Substitute '1800 s' *for* '3600 s'.

(*Page* 18, *Table* A27, *Notes*] — Insert the following new Notes after Note 5:

'**6** For Sl No. (ix), value shall be represented in unsigned char format and interpreted as below

- 0 => means Forwarded only metering mode
- 1 => means net metering mode

7 For Sl No. (x), value shall be represented in unsigned char format and interpreted as below

- 0 => means post paid meter
- 1 => means pre-paid meter

8 Prepayment facilities shall be achieved by HES. In "pre-paid meter " mode the parameter listed at Sl No. (xi), (xii), (xiii), (xiv) and (xv) shall only be updated in meter from HES. These parameters shall have Read Write access in US association and Read Only access in MR and IHD Associations.

9 Parameter listed at Sl No (xii) and (xv) shall be represented as octet string(12) and interpreted in DLMS date-time format.

10 Parameter listed at Sl No. (viii) shall have execute access and Parameter listed at Sl No. (xix) shall have set access in FW association.'

(*Page* 18, *clause* **22.1**) — Insert the following at the end.

The Name plate details parameters are listed in Table A27.

This is modeled as profile generic with OBIS code = 0.0.94.91.10.255, IC = 7, Attribute = 2.

[*Page* 19, *Table* A28, *Item No*. (4.0), c*ol* 3] — Substitute '5.1, 5.2 and Table 2' *for* '5.1 and 5.2'.

(*Page* 19, *Table* A28) — Delete Item No. 5.0 (Simultaneous operation).

(*Page* 19, *Table* A28, *Note*) — Substitute the following notes for the existing:

'**1** Item no 4.0 Association properties: 'PUSH', 'Firmware upgrade' & "IHD" are not the part of data verification tests.

2 Item No 19.0(b) Programmable Parameter (x), (xi), (xii), (xiii), (xiv), (xv), (xix) and (viii) is not part of data verification test.

3 Meter under Test should be tested for configured 'metering mode' as submitted by manufacturer.
4 Clause numbers refer to IS 15959 (Part 1) and table number refer to this standard**.'**

[*Page* 19, *Table* A29, *Item No.*(2.3), *col* 3] — Substitute '5.1, 5.2 & Table 2' *for* '5.1 and 5.2'.

(*Page* 19, *Table* A29) — Delete Item No. 2.4 (Simultaneous operation).

(*Page* 19, *Table* A29, *Note*) — Substitute the following notes for the existing:

'1 Item no 2.3 Association properties: 'PUSH', 'Firmware upgrade' & 'IHD' are not the part of data verification tests.
2 Item No 2.14.2 Programmable Parameter (x), (xi), (xii), (xiii), (xiv), (xv), (xix) and (viii) is not part of data verification test.'
3 Meter under Test should be tested for configured 'metering mode' as submitted by manufacturer.
4 Clause numbers refer to IS 15959 (Part 1) and table number refer to this standard**.'**

[*Page* 20, *Table* A30, *Sl No.* (iii), *col* 3] — Substitute 'Table A17' *for* 'Table A18'.

(*Page* 20, *Fig.* 4) — Insert the following contents in each block:

Block 1 — SM Variant— 1With NAN
Block 2 — White box having Variant — 1NANModule
Block 3 —SM Test software Module as per IS 15959(Equivalent to the DLMS Client interface at HES end for the SM)

(*Page* 20, *clause* **24**, *para* 1, *line* 4) — Delete 'CTT or'.

(*Page* 20, *clause* **24**, *para* 2, *line* 3) — Delete 'CTT or'.

(*Page* 20, *clause* **24**) — Insert the following at the end of second paragraph :

'Testing for the test of functional test given in table A30 shall be done using white Box and the SM software shall be provided by Manufacturer.'

(*Page* 20, *clause* **24**, *para* 3, *line* 1) — Delete 'CTT and' .

(*Page* 20, *Fig.* 5) — Insert the following contents in each block :

Block 1 — SM Variant— 2With WAN Module
Block 2 — SM Test software Module as per IS 15959(Equivalent to the DLMS Client interface at HES end for the SM)

(*Page* 20, *Note*) — Insert the following under Note:

'The required compatible accessories namely, White box having Variant — 1 NAN Module, router etc shall be provided by the respective manufacture for testing along with the test smart meter.'

(ETD 13)

Publication Unit, BIS, New Delhi, India